

L-1297-65

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concentration. On the further assumption that

$$\rho_1 = \rho_0 = \rho_2 = \frac{\rho_0}{\gamma} \ll z_0$$

the Doppler shift is represented by

1. 24

$$z_0 \approx z_0 \approx z_0 \approx z_0$$

$$\left( \frac{z_0}{z_0} \right) = \sin \pi \left( \frac{z_0}{z_0} \right) \left( 1 + \frac{z_0}{z_0} \right) \cdot$$

The maximum variation in the electron density in the nonuniform structures is given by

$$\delta N = \Delta N / N_0 = (N_{d_0} - N_0) / N_0,$$

For the altitude  $z_0 \approx 400-1200$  km, a distribution curve was constructed in the linear dimension  $\rho_0$

$$W(\rho_0) = \sum_{\Delta \rho_0} n_0 \Delta \rho_0 \sum_{\rho_0=0} n_0$$

and its longitudinal variation was recorded in the interval  $\Delta \lambda = 25-35^{\circ}$ ,  
from 10° to 80°. The  $\delta N$  in the  $\rho_0$  range of  $\rho_0 = 2-3$  km and weakly

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expressed maxima at  $P_M = 7-10$  km. The results show further that the number of nonuniform structures is not distributed uniformly along the longitude. At times, the electron concentration nonuniformities increase considerably. Finally, very strong electron concentration nonuniformities are observed at 400-800 km altitudes, corresponding to magnitudes 3-4. The electron concentration nonuniformities are observed at altitudes of 100-200 km, corresponding to magnitudes 1-2.

6 figures, and 3 tables.

6 figures, and 1 table.

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Cord 3/3

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after intestinal obstruct. surg., spontaneous sloughing  
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(INTESTINAL OBSTRUCTION, surg.  
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VITT, A.A. .

ANDRONOV, Aleksandr Aleksandrovich, akademik [deceased]; VITT, Aleksandr Adol'fovich [deceased]; KHAYKIN, Semen Emmanuilovich; ZHELEZTSOV, N.A.. Prinimala uchastiye: LEONTOVICH-ANDROHOVA, Ye.A.. GRIGOROVA, V.A., red.; GAVRILOV, S.S., tekhn.red.

[Theory of vibration] Teoriia kolebanii. Izd.2. Perer. i dop.  
N.A.Zheleztsova. Moskva, Gos.izd-vo fiziko-metem.lit-ry, 1958.  
915 p. (MIRA 12:5)

(Vibration)

VITT, A. A.

16(1); 24(1)

PHASE I BOOK EXPLOITATION

SOV/2627

Andronov, Aleksandr Aleksandrovich, Aleksandr Adol'fovich Vitt, and  
Semen Emmanuilovich Kheykin

Teoriya kolebaniy (Theory of Vibrations) 2nd ed., rev. and enl. Moscow,  
Fizmatgiz, 1959. 915 p. 20,000 copies printed.

Rev. and enl. by N.A. Zheleztsov; Ed.: V.A. Grigorova; Tech. Ed.: S.S.  
Gavrilov.

PURPOSE: This book is intended for scientific, engineering, and technical  
workers who encounter various vibrational processes in their work.

COVERAGE: The book systematically presents a large amount of material on the  
theory of nonlinear vibrations of autonomous nonlinear systems with one  
degree of freedom, which encompasses a large number of vibrational systems  
encountered in engineering practice. The fundamental aim of the book is not  
the solution of a large number of practical problems but the explanation of the  
basic propositions and methods adequate for the field of nonlinear vibrations  
in general. The presentation of the material is based on the works of Poincaré  
and Lyapunov. So-called qualitative integration is discussed in detail.

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## Theory of Vibrations

All these problems are studied with respect to the simplest case of a system with one degree of freedom without external force, a so-called autonomous system. Ye.A. Leontovich-Andronova assisted in revising the first edition. The Preface to the second edition was written by S.E. Khaykin. There are 201 references: 130 Soviet, 27 German, 26 French, 17 English, and 1 Italian,

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SOV/2627

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Theory of Vibrations

SOV/2627

903

APPENDIX III. Certain Trigonometric Formulas

905

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913

Subject Index

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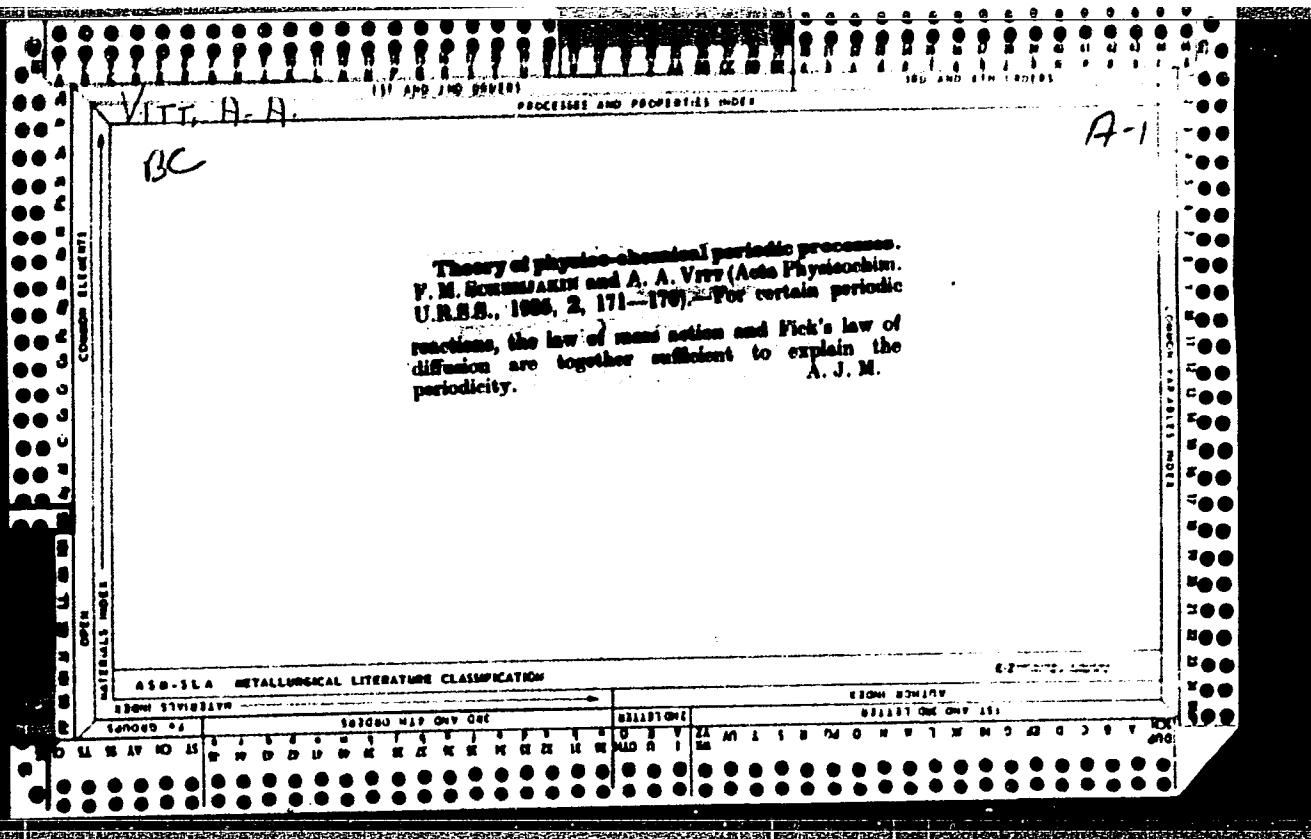
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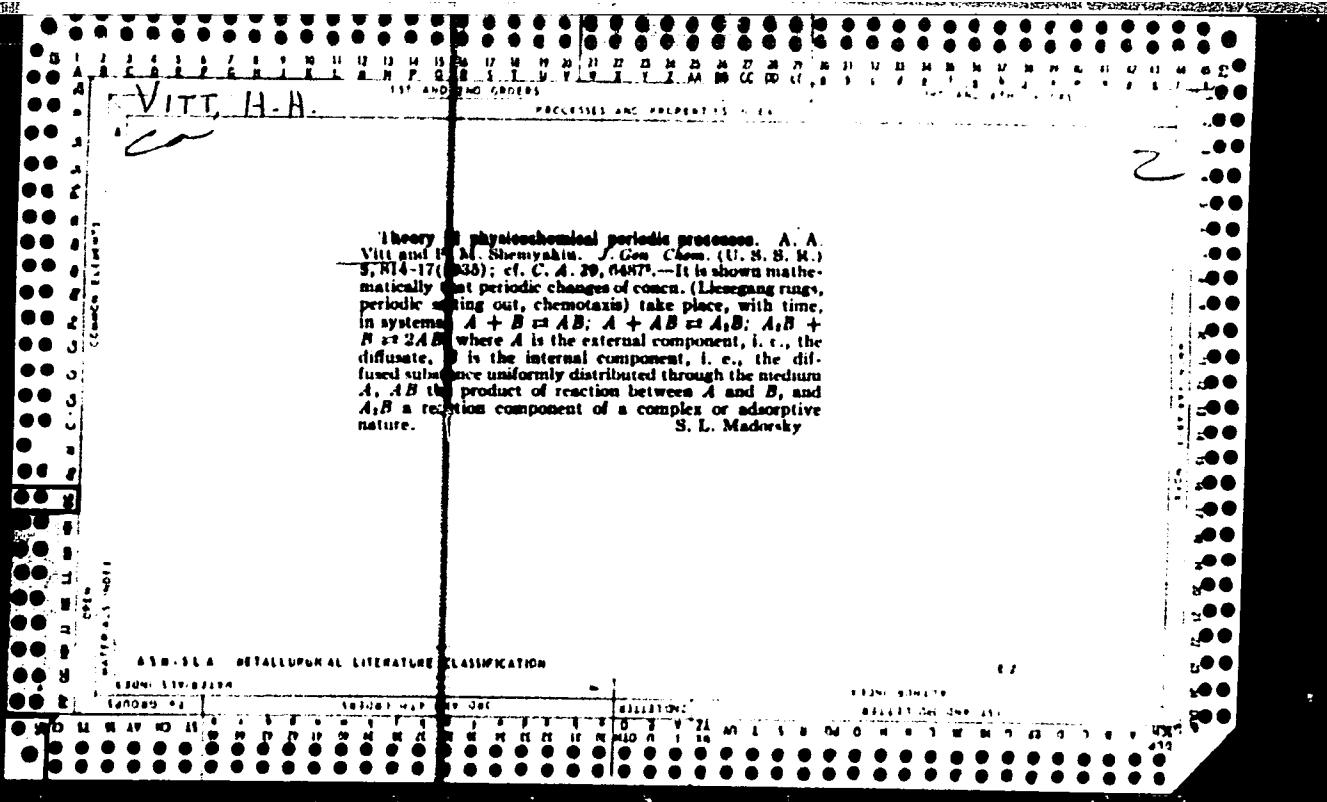
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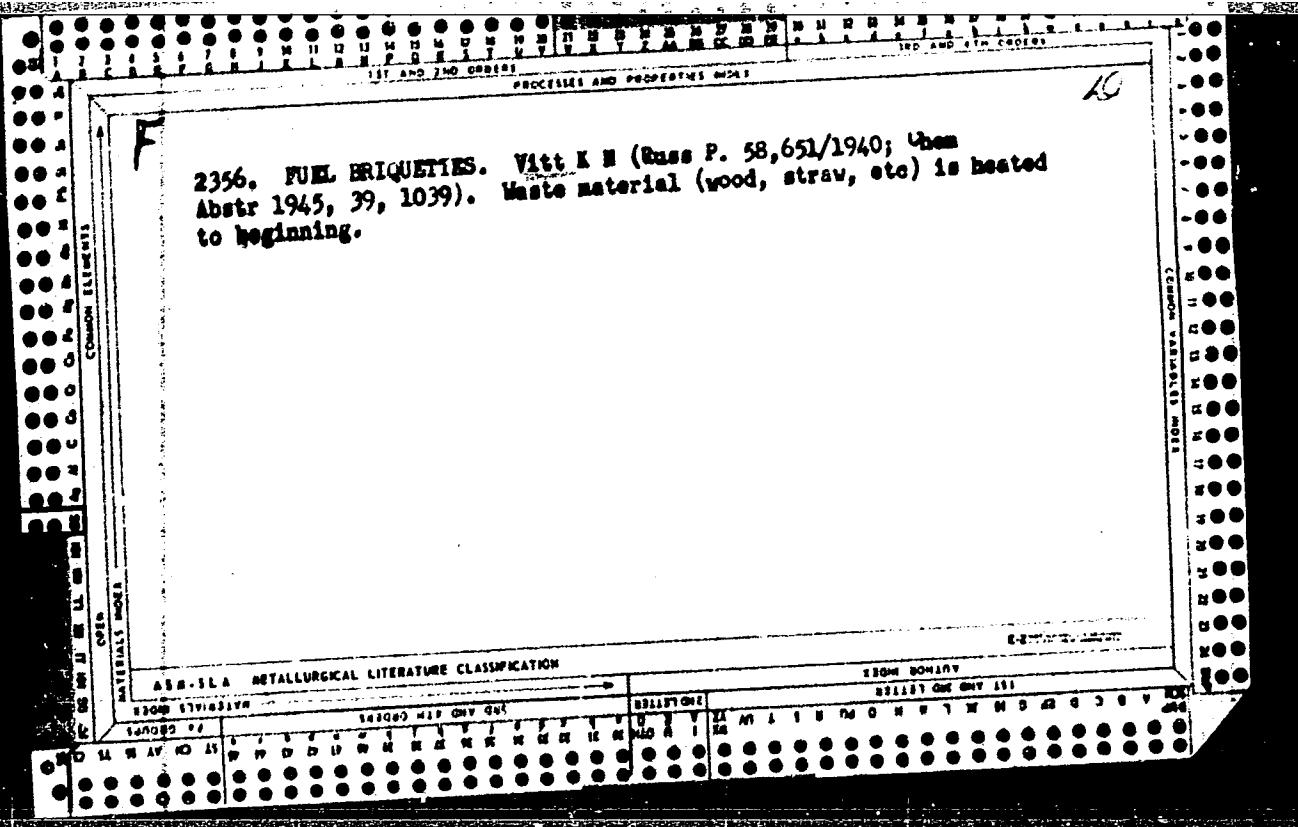


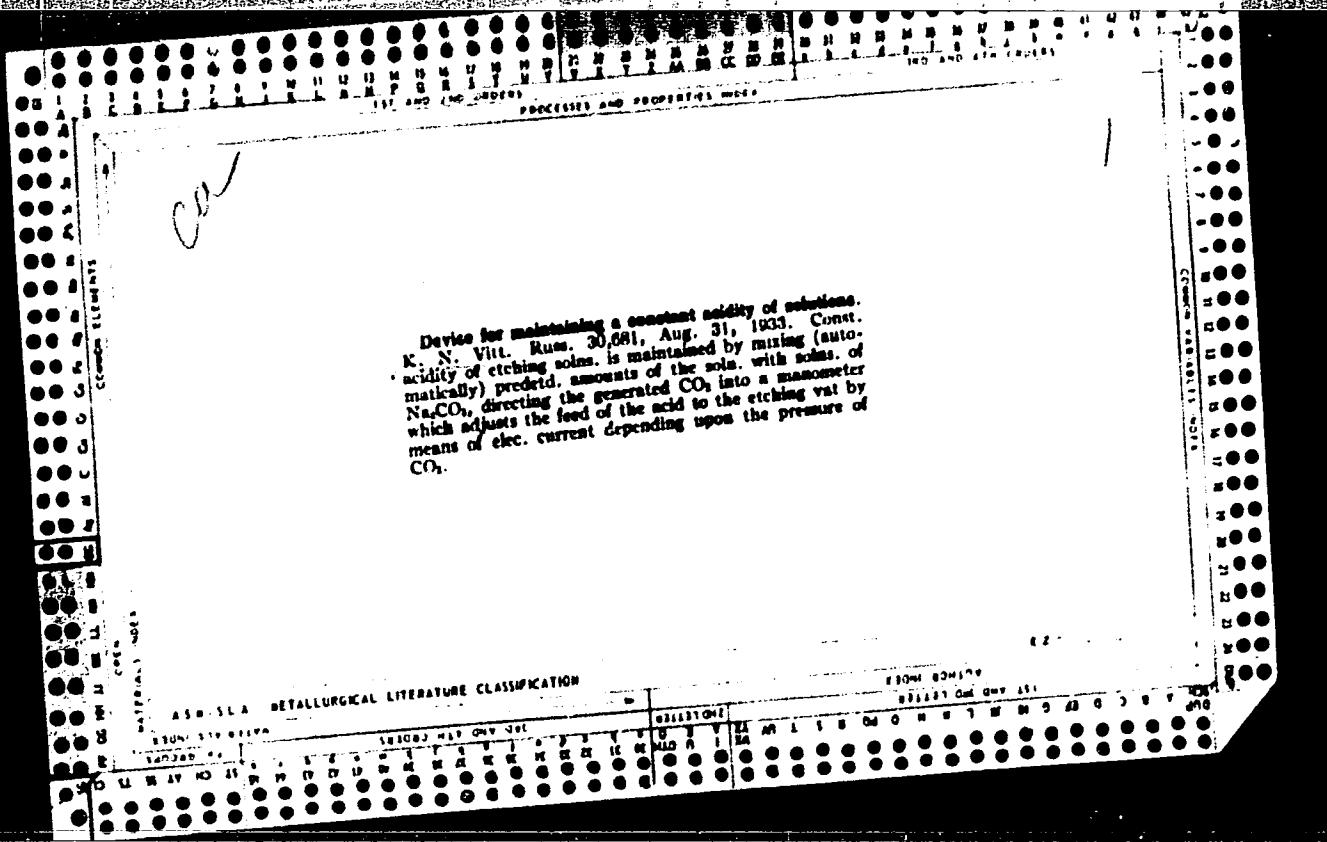


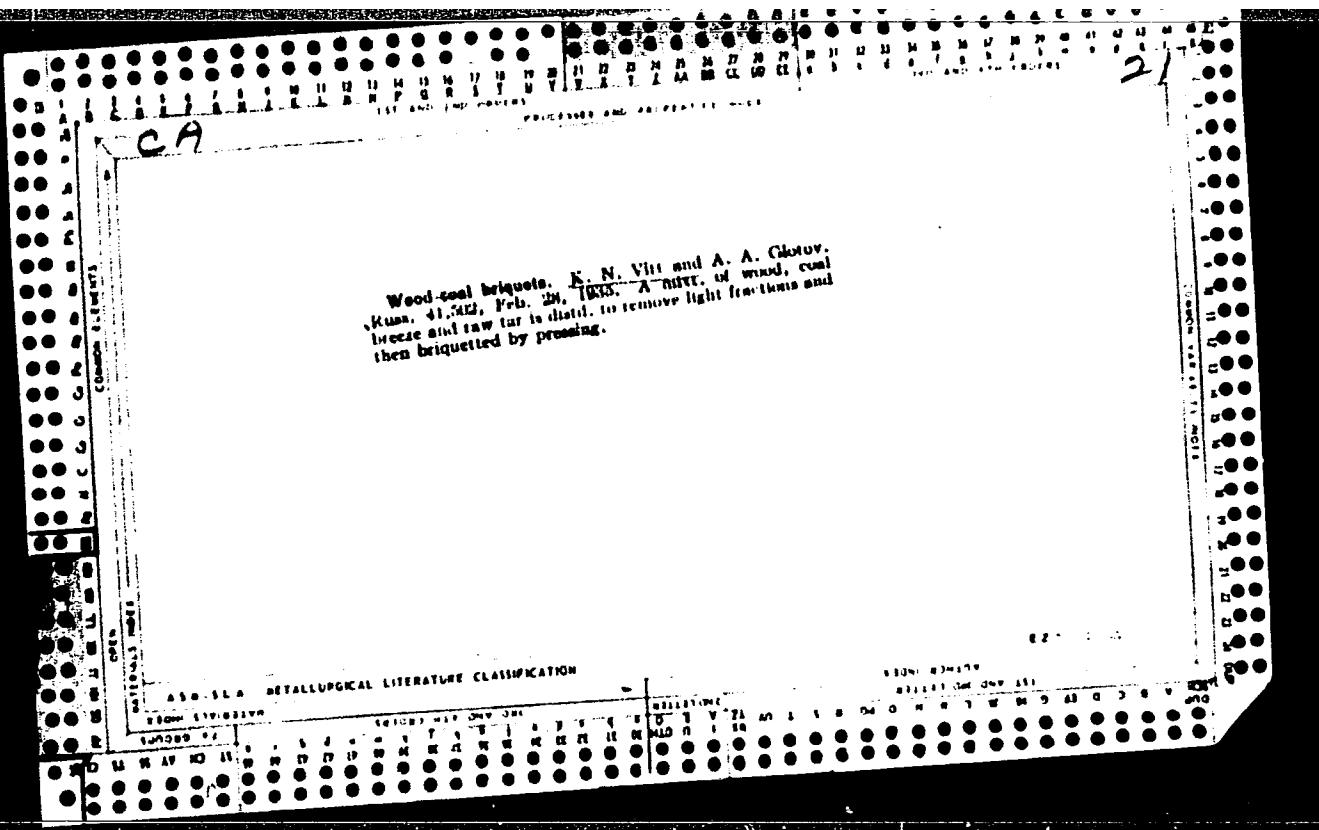
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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120020-1"

VIIT, N.V.

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1. Moskovskiy gosudarstvennyy pedagogicheskiy institut  
inostrannyykh yazykov.

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Separation of isomeric alkyl benzenes by gas chromatography.  
Zhur. anal. khim. 20 no.8:850-855 '65. (MIRA 18:10)

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Institut biokhimii i fiziologii mikroorganizmov AN SSSR, Moskva.

"APPROVED FOR RELEASE: 09/01/2001

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APPROVED FOR RELEASE: 09/01/2001

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KURSANOV, D. N., SETKINA, V. N., VITT, S. V., PARNES, Z. N.

"Study of the Mechanism of Certain Reactions by the Method of Hydrogen Exchange,"  
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10

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(Chemical reaction--Conditions and laws)  
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VITT, S.V.; KUDRYAVTSEV, R.V.

Reaction mechanism between tertiary amines and complex esters.  
Zhur. ob. khim. 27 no.10:2799-2805 O '57. (MIRA 11:4)  
(Amines) (Esters)

VITI S. V.

30-12-35/45

AUTHOR: None Given.

TITLE: Defense of Dissertations (Zashchita dissertatsiy).  
(January - July 1957) (Yanvar' - iyul' 1957).  
Section of Chemical Sciences (Otdeleniye khimicheskikh nauk).

PERIODICAL: Vestnik AN SSSR, 1957, Vol. 27, Nr 12, p. 112 (USSR)

ABSTRACT: At the Institute for Chemical Physics (Institut khimicheskoy fiziki). Application for the degree of Candidate of Physical-Mathematical Sciences: M. M. Khaletskiy - Measuring of total Cross Sections and of the Differential Cross Sections of the elastic scattering of 14.8 MeV neutrons,  $\sigma$  elasticity ( $\Theta$ ) by the method of determination of the  $(n, a)$  coincidence (Izmereniye polnykh secheniy  $\sigma_t$  i differentials'nykh secheniy uprugogo rasseyaniya 14,8 Mev neytronov  $\sigma$  upr. ( $\Theta$ ) metodom scheta  $(n, a)$  sovpadeniy).  
At the Institute for Element-organic Compounds (Institut elementoorganicheskikh soyedineniy). Application for the degree of Doctor of Chemical Sciences: L. R. Zalukayev - New Ways of Producing Nitrocompounds (Novyye puti polucheniya nitrosoyedineniy). L. G. Makarova - Investigation in the field

Card 1/2

Defense of Dissertations.  
(January - July 1957)  
Section of Chemical Sciences

30-12-35/45

of the decomposition mechanism of the diphenyl iodonium- and aryl diazonium salts (Issledovaniye v oblasti mekhanizma razlozheniya difenilyodoniyevykh i arildiazoniyevykh soley). Applications for the degree of Candidate of Chemical Sciences: S. V. Vitt-Investigation of the mechanism of alkylation by means of ammonium compounds (Issledovaniye mekhanizma alkilirovaniya soyedineniyami ammoniya). G. M. Pogosyan - synthesis and polymerization of alkoxystirenes (Sintez i polimerizatsiya alkoksistirolov).

AVAILABLE: Library of Congress

1. Chemistry 2. Organic compounds—Elements

Card 2/2

VITT, S.V.

AUTHOR KURSANOV, D.N., corresponding member of the PA - 3157  
Academy of Science and VITT, S.V.

TITLE On the Mechanism of the Alkylation of Alcohols by N-Trimethyl-  
 $\alpha$ -phenethylammonium iodide.  
(Issledovaniye mekhanizma alkilirovaniya spirtov iodistym N-tri-  
metil- $\alpha$ -fenetilammoniyem - Russian)

PERIODICAL Deklady Akademii Nauk SSSR, 1957, Vol 113, Nr 3, pp 607-609, (U.S.S.R.)  
Received 6/1957 Reviewed 7/1957

ABSTRACT The alkylation of methyl-, ethyl- and H-butyl alcohols was inve-  
stigated with the optically-active salt of d-N-trimethyl- $\alpha$ -phe-  
nethylammonium. It was found that in all cases investigated the ethers  
contained had no optical activity. It remained unclear, however,  
whether racemization takes place with alkylation or in the ini-  
tial salt of ammonia as a result of heating with alcohol at high  
temperatures. In order to clear this up, reaction was carried out  
in such a manner that the d-N-trimethyl- $\alpha$ -phenethylammonium iodide  
did not enter into reaction as a whole. That part, which did not  
enter into reaction was then separated from the salt mixture by  
fractioned crystallization. It was found that the separated salt  
retained nearly its entire original optical activity, whereas the  
 $\alpha$ -phenethylmethyl ether obtained showed no optical activity. From  
the data obtained it can be seen that the alkylation of alcohols  
with N-trimethyl- $\alpha$ -phenethylammonium takes place by the formation  
of  $\alpha$ -phenethylcarbonium, i.e. in accordance with the asynchronous

Card 1/2

PA - 3157

On the Mechanism of the Alkylation of Alcohols by N-Triethyl-  
α-phenethylammonium Iodide.

process. The experiments are described.  
(with one table and three citations from Slavic publications)

ASSOCIATION Institute for Element-Organic Compounds of the Academy of  
Science of the U.S.S.R.

PRESENTED BY

SUBMITTED

AVAILABLE

Card 2/2

, VITT S V.

AUTHOR KURSANOV D.N., Corresponding Member of the Academy 20-5-34/67  
VITT S.V.

TITLE The Study of the Mechanism of Alkylation of Phenols by N-tri-  
methyl- $\alpha$ -phenylethylammonium iodide.  
(Issledovaniye mekhanizma alkilirovaniya fenolov iodistym  
N-trimetil- $\alpha$ -fenetilammonium -Russian)  
Doklady Akademii Nauk SSSR, 1957, Vol 113, Nr 5, pp 1066-1069 (U.S.S.R.)  
Received 7/1957  
Reviewed 8/1957

ABSTRACT A number of research workers already studied the alkylation of  
phenols and phenolate anions which contain a benzyl- or substi-  
tuted benzyl radical. It was found that on the occasion of in-  
teraction between chlorid-N-benzylpyridinium and phenol a mixture  
of C- and O-alkylation products is produced. It ought to be belie-  
ved that this reaction, like other alkylation processes previously  
studied belongs to the heterolytic reactions of the substitution  
of the Sn type. Phenol alkylation shoud develop either according  
to the synchronous mechanism A or to the asynchronous mechanism B,  
the latter including the intermediate formation of a free carbo-  
nium ion. The authors investigated the interaction between iodine-  
N-trimethyl- $\alpha$ -phenethylammonium and resorcin and fluoroglucin. Du-  
ring heating of these phenols with ammonium salt a substitution  
of the hydrogen atoms of the phenol kernel by  $\alpha$ -phenethylradical  
(C-alkylation reaction) takes place at 150° and more. The same al-  
kylation of the two above phenols through the optically active N-

Card 1/2

The Study of the Mechanism of Alkylation of Phenols  
by N-trimethyl- $\alpha$ -phenylethylammonium iodide. 20-5-34/67

trimethyl- $\alpha$ -phenethylammonium was carried out at 155-175° with an abundance of the corresponding phenol. If the reaction develops according to schedule A, the produced  $\alpha$ -phenethylphenols must be optically active, in the other case (B), they must be inactive. It was found that the  $\alpha$ -phenethylphenols are optically inactive and also the  $\alpha$ -phenylpropion acid produced from their oxidation. Herefrom it may be concluded that in phenol alkylation ammonium decay first to the accompaniment of the formation of  $\alpha$ -phenethylcarbonium. The latter reacts with phenol and therefore reaction develops according to (B). This was also confirmed by the reaction with deuteroresorcin instead of resorcin. Reactions, methods, yields, etc. are described in detail.  
(With 6 Slavic references).

ASSOCIATION Institute for Element-Organic Compounds of the Academy  
PRESENTED BY  
SUBMITTED 14.11.1956  
▲ AVAILABLE Library of Congress  
Card 2/2

VITT, S.V.

AUTHOR:

KURSANOV, D.N., VITT, S.V.

20-6-27/59

TITLE:

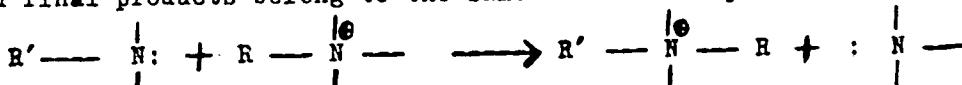
The Study of the Mechanism of the Alkylation of Amines by N-Tri-Methyl- $\alpha$ -Phenylethylammonium Iodide.  
(Issledovaniye mekhanizma alkilirovaniya aminov yodistym N-tri-metyl- $\alpha$ -fenetilammoniem. Russian).

PERIODICAL:

Doklady Akademii Nauk SSSR, 1957, Vol 113, Nr. 6, pp 1283 - 1285  
(U.S.S.R.)

ABSTRACT:

It is known that the ammonium salts of the type  $\text{Ar---CH}_2\text{---N}^-$  can alkylate primary and secondary amines by the transfer of the radical  $\text{ArCH}_2$  from one nitrogen atom to the other. This process is also interesting by the fact that in this reaction the initial and final products belong to the same class of compounds:



The mechanism of this reaction remains uninvestigated. The authors investigated the alkylations of piperidine and morpholine by the optically active N-trimethyl- $\alpha$ -phenylethylammonium iodide. This reaction can develop either according to a synchronous or according to an asynchronous mechanism with an intermediate formation of a free carbonion. In the first case the developing N- $\alpha$ -phenylethyl-piperidin has to be optically active. In the second case (with car-

Card 1/3

The Study of the Mechanism of the Alkylation of Amines by N-Tri-methyl- $\alpha$ -Phenylethylammonium Iodide. 20-6-27/59

(on ion formation) the optically activity would be lacking. It was found that in the substitution process this activity of the phenylethylradical is conserved: the N- $\alpha$ -phenylethylpiperidine obtained from the d-salt turned to the right side whereas the N- $\alpha$ -phenylethylmorpholine resulted from the l-salt turned to the left. Therefore the reaction passes according to a synchronous mechanism. It was necessary to determine the configuration of the leftturning substance. In so far as in the here applied reaction the asymmetrical centre is not concerned it can be stated that the leftturning substance belongs to the l-series. From this it results that in the case of the mentioned reaction with piperidine (and obviously also with morpholine) the inversion of the reversal of the  $\alpha$ -phenylradical takes place. Since in the case of heating of longer duration optical purity was reduced, a secondary reaction of the symmetrical substitution seems to have taken place. Apparently the repetition of this process is bound to lead to ramification. In the experimental part the reactions with yields and constants are described in detail. (4 Slavic references).

Card 2/3

20-6-27/59

The Study of the Mechanism of the Alkylation of Amines by N-Tri-Methyl- $\alpha$ -Phenylethylammonium Iodide.

**ASSOCIATION:** Not given  
**PRESENTED BY:**  
**SUBMITTED:** 14 November 1956  
**AVAILABLE:** Library of Congress

Card 3/3

VITT S V.

79-2-28/64

AUTHORS: Parnes, Z. N., Vitt, S. V., Kursanov, D. N.

TITLE: An Investigation of the Isomerization of Pinacoline by the Method of Traced Atoms (Issledovaniye izomerizatsii pinakolina metodom mechenykh atomov)

PERIODICAL: Zhurnal Obshchey Khimii, 1950, Vol. 20, Nr 2, pp. 410 - 413 (USSR)

ABSTRACT: At present different researchers found that the aliphatic carbon ions (iony karboniya) enter into a reaction of hydrogen exchange with acids. The hydrogen atoms are exchanged with the carbon atoms close to the carbon center (references 1 - 3). It was also shown that the carbon center of the carbon ion which was formed by the action upon carbonyl compounds by sulfuric or another strong mineral acid (at 0°C) is incapable of migrating, in contrast to the carbon ion which was obtained from the hydrocarbon with a tertiary carbon atom. Thus in the interaction of ketones, aldehydes, carboxylic acids with  $D_2SO_4$  or  $D_3PO_4$  the hydrogen exchange only takes place in those hydrogen atoms that are at  $C_{\alpha}$ . But cases of ketone isomerization are known (references 4 - 7) which are explained by a displacement of the carbon center. Barton and Porter (reference 6) recently most exactly proved that the oxygen atom does not go over from one carbon to another in the ketone isomerization, but that

Card 1/3

79-2-28/64

## An Investigation of the Isomerization of Pinacoline by the Method of Traced Atoms

only the hydrocarbon radicals migrate. For confirming this situation they used ditertiary butylketone (III) which contains C<sup>14</sup> in the carbonyl group. It seemed interesting to the authors to investigate the interaction of pinacoline (V) with deuteriosulfuric acid under the same conditions under which the isomerization of the above-mentioned ketones (reference 6) takes place. The isomerization of pinacoline assumed in this connection cannot be determined by the usual chemical methods, as the reaction product is not different from the initial product; but by means of labelled atoms it was hoped to discover it. On the basis of data on the regrouping of pinacoline (reference 9) it must be reckoned with the fact that the ion (VII) either only exists for such a short time that it cannot markedly enter the hydrogen-exchange reaction and that the regrouping takes place synchronously, i.e. without forming a free ion (VII). But the ions (VI) and (VII) must easily enter the hydrogen reaction. Due to the reversability of the isomerization reaction all hydrogen atoms of pinacoline must finally be exchanged. On the basis of the data given it may be supposed that the hydrogen exchange in the hidden isomerization occurs as a consequence of a regrouping of methyl groups and is independent of the displacement of the carbon center. Summary: 1) The interaction of pinacoline with deuteriosulfuric acid was investigated under the conditions

Card 2/3

79-2-28/64

An Investigation of the Isomerization of Pinacoline by the Method of Traced Atoms

of the ketone isomerization. It was shown that under these conditions pinacoline exchanges the hydrogen atoms in the tertiary butyl group against deuterium. 2) The mechanism of the reaction of deutero-exchange and pinacoline-isomerization were investigated. There are 1 table, and 9 references, 4 of which are Slavic.

ASSOCIATION: Institute for Elemental-organic Compounds AS USSR  
(Institut elementoorganicheskikh soedineniy Akademii nauk SSSR)

SUBMITTED: January 16, 1957

AVAILABLE: Library of Congress

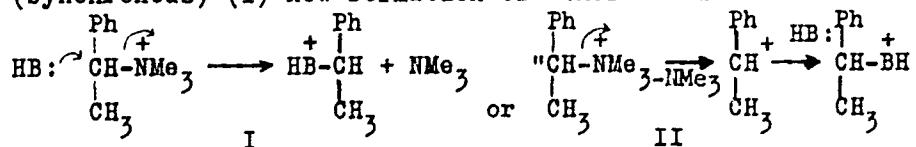
Card 3/3

5(3)

SOV/62-59-8-17/42

AUTHORS: Kursanov, D. N., Vitt, S. V.TITLE: Mechanism of the Alkylation by Means of the  $\alpha$ -Phenethyl-ammonium-substituted Cation

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1959, Nr 8, pp 1445-1452 (USSR)

ABSTRACT: In the present paper the results of a previous investigation (Ref 1) on the alkylation mechanism of bases of various basicities (alcohols, phenols, and amines) with the optically active N-trimethyl- $\alpha$ -phenethylammonium chloride are investigated. In this type of reaction either a fracture of a few or more bonds, or a temporary existence of free, kinetically independent particles results (ions or radicals): asynchronous reaction (II); or a fracture and simultaneous (synchronous) (I) new formation of other bonds:

The alkylation of the alcohols, phenols, and amines takes place in such a way as to permit the formation of a new bond of the carbon atom of the alkylating group in the place of the highest

Card 1/2

SOV/62-59-8-17/42

Mechanism of the Alkylation by Means of the  $\alpha$ -Phenethylammonium-substituted Cation

electron density of the substance which is to be alkylated ( $R=Ph-CH_2-CH_3$ ). In the case of alcohols racemic phenylethyl-ether is formed as an intermediary product; the reaction process is asynchronous. In the case of phenols (resorcin, phloro-glycine) a carbonium ion is formed in the intermediate stage (Kursanov, Setkina, Ref 12). This reaction is also asynchronous. The alkylation of the amines investigated (piperidine and morpholine) was synchronous. The alkylation of the phenylethyl-ammonium molecules for which a cation is substituted can be synchronous or asynchronous. The reaction is affected only by the basicity of the group which is to be substituted. Stronger basic groups such as amines have a synchronous alkylation, weakly basic groups, such as alcohols, and phenols, an asynchronous one. The methods of alkylation are described in the experimental part. There are 1 table and 17 references, 8 of which are Soviet.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR  
(Institute of Elemental-organic Compounds of the Academy of Sciences, USSR)

SUBMITTED: November 23, 1957

Card 2/2

SETKINA, V.N.; KURSANOV, D.N.; VITT, S.V.; MARTINKOVA, N.S.

Isotopic exchange of hydrogen of primary alkyl chlorides in the  
presence of aprotic acids. Izv. AN SSSR. Otd. khim. nauk no.11:  
2081-2083 N '61. (MIRA 14:11)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.  
(Hydrogen--Isotopes) (Chlorides)

VITT, S.V.; MARTINKOVA, N.S.

Dehydrogenation of secondary alcohols by homogeneous basic  
catalysis. Izv.AN SSSR.Otd.khim.nauk no.6:1125 '62. (MIRA 15:8)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.  
(Alcohols) (Dehydrogenation)

VITT, S.V.; MARTUNKOVA, N.S.

Hydride mobility of  $\alpha$ -hydrogen atoms in alcoholates. Izv. AN  
SSSR. Otd. khim. nauk no. 5:930 My '62. (MIRA 15:6)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.  
(Alcoholates) (Hydrogen)

VITT, S.V.; BONDAREV, V.B.; POLININ, V.L.; ROZENGART, M.I.

Determination of xylene isomers in complex hydrocarbon mixtures  
by capillary gas-liquid chromatography. Izv. AN SSSR. Ser.  
khim. no.11:2043-2045 N '63. (MIRA 17:1)

1. Institut organicheskoy khimii imeni N.D. Zelinskogo AN SSSR.

NESMEYANOV, A. N., akademik; KOCHETKOVA, N. S.; VITT, S. V.  
BONDAREV, V. B.; KOVSHOV, Ye. I.

Alkylation of ferrocene. Dokl. AN SSSR 156 no. 1:99-101  
My '64. (MIRA 17:5)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

WIL, NY, 50000000, 5000, 10000, 7, 000

Analyses of various and other available information,  
incl. AN, 2000, 10000, 50000000, 5000, 10000, 7, 000

1. Inputs to and from the NCSIN.

5/0020/64/156/001/0099/0101

ACCESSION NR: AP4035814

AUTHOR: Nesmeyanov, A. N. (Academician); Kochetkova, N. S.; Vitt, S. V.;  
Bondarev, V. B.; Kovshov, Ye. I.

TITLE: Alkylation of ferrocenes

SOURCE: AN SSSR. Doklady\*, v. 156, no. 1, 1964, 99-101

TOPIC TAGS: ferrocene, alkylation, Friedel Crafts, ethylferrocene, diethylferrocene, triethylferrocene, tert butylferrocene, butyl ferrocene, preparation, IR spectra, NMR spectra

ABSTRACT: In this work ferrocenes were alkylated to give 80-90% yields, in comparison with the Friedel Crafts methods which give 20-30% of alkylates. Ferrocene was reacted with ethylbromide in the presence of equimolar amounts of  $\text{AlCl}_3$  and  $\text{LiAlH}_4$  in n-heptane; the reaction products were water extracted and the organic portion subjected to vacuum distillation. The 100-130°C (at 1 mm. Hg) fraction contained ethylferrocene and isomers of diethylferrocene, and the 130-150°C/1mm fraction contained a mixture of isomeric triethylferrocenes. Mono-, di-, tri- and tetra-tert-butylferrocenes were similarly prepared. IR and NMR

Card: 1/2

ACCESSION NR: AP4035814

indicated the third and fourth tert-butyl group is attached to the second *g* ring.  
"NMR spectra were obtained on NMR spectrograph TSLA-5535 at 40 megacycles by  
E. I. Fediny\*m and P. V. Petrovsk, for which the authors express their sincere  
appreciation. Orig. art. has: 2 tables.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR  
(Institute of Organometallic Compounds Academy of Sciences SSSR)

SUBMITTED: 03Feb64

ENCL: 00

SUB CODE: OC

NO REF Sov: 005

OTHER: 003

Card 2/2

VITT, S.V.; BONDAREV, V.B.; POLININ, V.L.

Separation of close-boiling mixtures on a capillary chromatograph  
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